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SCHMEISER OLSEN & WATTS
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MESA, AZ 85201

EXAMINER

CANNING, ANTHONY J

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/767,066

Applicant(s)

PARK ET AL.

Examiner

Anthony J. Canning

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-9 and 12-21 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement of Amendment

1. The amendment to the instant application was entered on 6 February 2006.

Claim Objections

2. Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
3. Claim 11 is objected to because of the following informalities: the caption reads (Canceled) although it appears to be amended. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 9, 12, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winsor (U.S. 2002/0117959 A1).

6. As to claim 1, Winsor discloses a flat fluorescent lamp, comprising: a back substrate (see Fig. 5; item 14; paragraph 0034); a front substrate made of a transparent material (see Fig. 1, item 16; paragraph 0031 says that the front substrate is made of a glass with a high dielectric constant) and mounted on the back substrate through a sealing member disposed therebetween (see Fig. 5, item 18; paragraph 0033), to be spaced from the back substrate by a predetermined interval (paragraph 0033 says the sealing member is 0.020 in. in height); a plurality of partitions alternately disposed between the back substrate and the front substrate to define a discharge channel of a zigzag shape therebetween (see Figs. 4 and 5, item 20; paragraphs 0032 and 0036; zigzag shapes can be drawn between many of the partitions; paragraph 0036 says that other suitable arrangements of the partitions may be made); a fluorescent material layer coated along a surface of the discharge channel defined by the partitions (see Fig. 5, item 34; paragraph 0037); a plurality of first electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the front substrate (see Fig. 5, item 24; paragraph 0038); second electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the back substrate and facing the first electrodes (see Fig. 5, item 22; paragraph 0027) a reflective layer to cover the entire back substrate and upper portions of the electrodes disposed to the back substrate (see Fig. 5, item 26;

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paragraph 0026). Winsor fails to specifically disclose that the reflective layer includes a white ceramic and glass. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reflective layer made of a white ceramic and glass, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ.

7. As to claim 2, Winsor discloses the flat fluorescent lamp as defined in claim 1. Winsor further discloses that the partitions are integrally formed with the back substrate (see Fig. 1, item 20 is integrally formed with both the upper and lower substrates, items 14 and 16).

8. As to claim 3, Winsor discloses the flat fluorescent lamp as defined in claim 1. Winsor further discloses that the partitions are made of the same transparent material as the front substrate, and are integrally formed with the front substrate (see Fig. 1, item 20 is integrally formed with both the upper and lower substrates, items 14 and 16).

9. As to claim 4, Winsor discloses the flat fluorescent lamp as defined in claim 1. Winsor further discloses that the partitions comprise first partitions integrally formed with the back substrate, and second partitions integrally formed with the front substrate (see Fig. 1, item 20 is integrally formed with both the upper and lower substrates, items 14 and 16; since the partitions are integrally formed with both substrates, the partitions can be said to be integral with the top or the bottom substrate).

10. As to claim 9, Winsor discloses that the flat fluorescent lamp as defined in claim 1. Winsor further discloses that the electrodes of the back substrate have a plurality of apertures, and the apertures are formed in stripe-, circle-, polygon-, or mesh-shapes (see Fig. 2, item 24;

although item 24 is the electrode on the front surface, paragraph 0028 says that the electrodes can take other embodiments, and since a mesh embodiment is given as an example for the front substrate it is also an embodiment for the electrodes on the back substrate).

11. As to claim 12, Winsor discloses the flat fluorescent lamp as defined in claim 1. Winsor further discloses that the reflective layer comprises a mixture of a glass material and a white ceramic material including Al_2O_3 , TiO_2 , and WO_3 , and is coated at a thickness not less than 20 μm (paragraph 0034).

12. As to claim 21, Winsor discloses the backlight lamp as defined in claim 14. Winsor further discloses that the discharge channel defined by the partitions has a pitch of 5 to 15 mm (paragraph 0032; the spacers are placed at 6.35 mm intervals, the channels between them have the same pitch).

13. Claims 13, 14, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winsor (U.S. 2002/0117959 A1) in view of Masahiro et al. (U.S. 2003/0034731 A1).

14. As to claim 13, Winsor discloses a backlight lamp, comprising: a back substrate (see Fig. 5; item 14; paragraph 0034); a front substrate made of a transparent material (see Fig. 1, item 16; paragraph 0031 says that the front substrate is made of a glass with a high dielectric constant) and mounted on the back substrate through a sealing member disposed therebetween (see Fig. 5, item 18; paragraph 0033), to be spaced from the back substrate by a predetermined interval (paragraph 0033 says the sealing member is 0.020 in. in height); a plurality of partitions alternately disposed between the back substrate and the front substrate to define a discharge channel of a zigzag shape therebetween (see Figs. 4 and 5, item 20; paragraphs 0032 and 0036;

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zigzag shapes can be drawn between many of the partitions; paragraph 0036 says that other suitable arrangements of the partitions may be made); a fluorescent material layer coated along a surface of the discharge channel defined by the partitions (see Fig. 5, item 34; paragraph 0037); a plurality of first electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the of the front substrate (see Fig. 5, item 24; paragraph 0038); second electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the back substrate and facing the first electrodes (see Fig. 5, item 22; paragraph 0027) a reflective layer to cover the entire back substrate and upper portions of the electrodes disposed to the back substrate (see Fig. 5, item 26; paragraph 0026). Winsor fails to specifically disclose that the reflective layer includes a white ceramic and glass. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reflective layer made of a white ceramic and glass, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ. Winsor '959 fails to disclose a light diffusion part spaced from an upper portion of the front substrate of the flat fluorescent lamp to diffuse light irradiated from the flat fluorescent lamp; an insulating layer disposed under the reflective layer of the flat fluorescent lamp through a first adhesive layer; and a base member disposed under the insulating layer through a second adhesive layer.

Masahiro et al. disclose a backlight lamp with a light diffusion part (see Fig. 2, item 4; paragraph 0049) spaced from an upper portion of the front substrate of the flat fluorescent lamp to diffuse light irradiated from the flat fluorescent lamp (paragraph 0005); an insulating layer

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disposed under the reflective layer of the flat fluorescent lamp through a first adhesive layer (paragraphs 0091 and 0092; the reflective layer is formed on the top of the top layer of the insulating adhesive, which is the first layer); and a base member disposed under the insulating layer through a second adhesive layer (the base member is adhered to the bottom layer of the insulating adhesive, which is the second layer). Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005). The reflective layer directs light toward the front of lamp, thereby improving brightness. The insulating layer protects the lamp and connects the reflective layer to the lamp base.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor to include a light diffusion part spaced from an upper portion of the front substrate of the flat fluorescent lamp to diffuse light irradiated from the flat fluorescent lamp; an insulating layer disposed under the reflective layer of the flat fluorescent lamp through a first adhesive layer; and a base member disposed under the insulating layer through a second adhesive layer, as taught by Masahiro et al., for the added benefit of uniform brightness, and a means to connect the reflective layer to the lamp base.

15. As to claim 14, Winsor discloses a backlight lamp, comprising: a back substrate (see Fig. 5; item 14; paragraph 0034); a front substrate made of a transparent material (see Fig. 1, item 16; paragraph 0031 says that the front substrate is made of a glass with a high dielectric constant) and mounted on the back substrate through a sealing member disposed therebetween (see Fig. 5, item 18; paragraph 0033), to be spaced from the back substrate by a predetermined interval (paragraph 0033 says the sealing member is 0.020 in. in height); a plurality of partitions alternately disposed between the back substrate and the front substrate to define a discharge

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channel of a zigzag shape therebetween (see Figs. 4 and 5, item 20; paragraphs 0032 and 0036; zigzag shapes can be drawn between many of the partitions; paragraph 0036 says that other suitable arrangements of the partitions may be made); a fluorescent material layer coated along a surface of the discharge channel defined by the partitions (see Fig. 5, item 34; paragraph 0037); a plurality of first electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the of the front substrate (see Fig. 5, item 24; paragraph 0038); second electrodes disposed in spaced apart relation and extending substantially completely along both sides of an outer surface of the back substrate and facing the first electrodes (see Fig. 5, item 22; paragraph 0027) a reflective layer to cover the entire back substrate and upper portions of the electrodes disposed to the back substrate (see Fig. 5, item 26; paragraph 0026). Winsor fails to specifically disclose that the reflective layer includes a white ceramic and glass. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reflective layer made of a white ceramic and glass, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ. Winsor fails to disclose a light diffusion part spaced from an upper portion of the front substrate of the flat fluorescent lamp to diffuse light irradiated from the flat fluorescent lamp; an insulating reflective layer disposed under the electrodes of the back substrate of the flat fluorescent lamp through a first adhesive layer; and a base member disposed under the insulating reflective layer through a second adhesive layer.

Masahiro et al. disclose a backlight lamp with a light diffusion part (see Fig. 2, item 4; paragraph 0049) spaced from an upper portion of the front substrate of the flat fluorescent lamp

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to diffuse light irradiated from the flat fluorescent lamp (paragraph 0005); an insulating layer disposed under the reflective layer of the flat fluorescent lamp through a first adhesive layer (paragraphs 0091 and 0092; the reflective layer is formed on the top of the top layer of the insulating adhesive, which is the first layer); and a base member disposed under the insulating layer through a second adhesive layer (the base member is adhered to the bottom layer of the insulating adhesive, which is the second layer). Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005). The reflective layer directs light toward the front of lamp, thereby improving brightness. The insulating layer protects the lamp and connects the reflective layer to the lamp base.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor to include a light diffusion part spaced from an upper portion of the front substrate of the flat fluorescent lamp to diffuse light irradiated from the flat fluorescent lamp; an insulating layer disposed under the reflective layer of the flat fluorescent lamp through a first adhesive layer; and a base member disposed under the insulating layer through a second adhesive layer, as taught by Masahiro et al., for the added benefit of uniform brightness, and a means to connect the reflective layer to the lamp base.

16. As to claim 16, Winsor discloses the backlight lamp as defined in claim 14. Winsor fails to disclose that the light diffusion part comprises a transparent plate to transmit light of the flat fluorescent lamp, and a diffusion plate disposed to be in contact with the transparent plate to diffuse the light.

Masahiro et al. disclose a backlight lamp with a light diffusion part comprises a transparent plate to transmit light of the flat fluorescent lamp, and a diffusion plate disposed to

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be in contact with the transparent plate to diffuse the light (see Fig. 2, item 4; paragraphs 0026 and 0049). Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor to include that the light diffusion part comprises a transparent plate to transmit light of the flat fluorescent lamp, and a diffusion plate disposed to be in contact with the transparent plate to diffuse the light, as taught by Masahiro et al., for the added benefit of providing the lamp with uniform brightness.

17. As to claim 18, Winsor discloses the backlight lamp as defined in claim 14. Winsor fails to disclose that the light diffusion part comprises an acryl plate having diffusibility.

Masahiro et al. disclose a backlight lamp wherein the light diffusion part comprises an acryl plate having diffusibility (paragraph 0077). Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor to include that the light diffusion part comprises an acryl plate having diffusibility, as taught by Masahiro et al., for the added benefit of providing the lamp with uniform brightness.

18. As to claim 19, Winsor and Masahiro et al. disclose the backlight lamp as defined in claim 13. Masahiro et al. further disclose that the diffusion plate comprises a diffusible film (paragraph 0005; the polycarbonate is interpreted by the examiner as a film) or an acryl plate. Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor to include that the diffusion plate comprises a diffusible film, as taught by Masahiro et al., for the added benefit of providing the lamp with uniform brightness.

19. Claims 7, 8, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winsor (U.S. 2002/0117959 A1) in view of Winsor (U.S. 5,509,841).

20. As to claims 7 and 8, Winsor '959 discloses the flat fluorescent lamp as defined in claims 1 and 6. Winsor '959 fails to disclose a plurality of floating electrodes disposed between the electrodes of the back substrate.

Winsor '841 discloses a flat fluorescent lamp with a plurality of floating electrodes disposed between the electrodes of the back substrate (see Fig. 3, items 76 and 78; column 6, lines 10-32). Winsor '841 further discloses that the floating electrodes provide access for electrical connection to the electric terminals (column 4, lines 55-59).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor '959 to include a plurality of floating electrodes disposed between the electrodes of the back substrate, as taught by Winsor '841, to provide access for electrical connection to the electric terminals.

21. As to claim 15, Winsor '959 and Winsor '841 disclose the backlight lamp as defined in claim 13. Winsor '841 further discloses that the light diffusion part comprises a transparent plate to transmit light of the flat fluorescent lamp, and a diffusion plate disposed to be in contact with the transparent plate to diffuse the light (see Fig. 3, item 114; column 6, lines 44-48). Winsor

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'481 also disclose that the light diffusion layer allows desired light to exit the lamp while reflecting unwanted wavelengths back into the lamp (column 6, lines 44-48).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor '959 to include that the light diffusion part comprises a transparent plate to transmit light of the flat fluorescent lamp, and a diffusion plate disposed to be in contact with the transparent plate to diffuse the light, as taught by Winsor '841, for the added benefit of allowing desired light to exit the lamp while reflecting unwanted wavelengths back into the lamp

22. As to claim 20, Winsor '959 and Winsor '841 disclose the backlight lamp as defined in claim 13. Winsor '959 further discloses that the discharge channel defined by the partitions has a pitch of 5 to 15 mm (paragraph 0032; the spacers are placed at 6.35 mm intervals, the channels between them have the same pitch).

23. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winsor (U.S. 2002/0117959 A1) in view of Winsor (U.S. 5,509,841) and in further view of Masahiro et al. (U.S. 2003/0034731 A1).

24. As to claim 17, Winsor '959 and Winsor '841 disclose the backlight lamp as defined in claim 13. Winsor '959 and Winsor '841 fail to disclose that the light diffusion part comprises an acryl plate having diffusibility.

Masahiro et al. disclose a backlight lamp wherein the light diffusion part comprises an acryl plate having diffusibility (paragraph 0077). Masahiro et al. further disclose that the diffusion plate provides the lamp with uniform brightness (paragraph 0005).

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Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the back lamp of Winsor '959 to include that the light diffusion part comprises an acryl plate having diffusibility, as taught by Masahiro et al., for the added benefit of providing the lamp with uniform brightness.

Allowable Subject Matter

25. Claims 10 and 11 contain allowable subject matter.

The following is a statement of reasons for the indication of allowable subject matter:

26. As to claims 10 and 11, the prior art of record fails to teach or reasonably suggest a flat fluorescent lamp wherein the apertures of the electrodes are formed to have sizes decreasing gradually from an inner side of each electrode to an outer side thereof.

Response to Amendment

27. The examiner acknowledges amendments to claims 1 and 9-21 and the cancellation of claims 5 and 6.

28. In light of the amendment changes to the rejection have been given above.

Final Rejection

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning 
24 April 2006


ASHOK PATEL
PRIMARY EXAMINER